

# PATENT ABSTRACTS OF JAPAN

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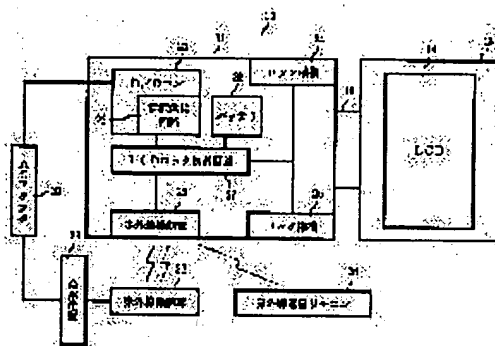
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## (54) SMALL-SIZED ELECTRONIC APPLIANCE

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To make it possible to prevent robbery of a small-sized electronic appliance even when it is left on a desk or the like and to efficiently prevent leakage of information.

**SOLUTION:** A portable computer 10 is equipped with a main body side infrared ray function part 28 and, when it cannot receive the infrared ray from an infrared ray function part 33 outside the main body, rock machineries 24 and 25 are operated on an assumption that the computer itself is taken away, a cover part 13 keeps this state under a condition in which it is closed to cover a computer body 1, protects a circuit device inside and also suppresses an act of robbery by emitting an alarm. To release the condition in which the portable computer 10 is rocked, a predetermined password needs to be inputted from an infrared ray communication remote controller 34.



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CLAIMS

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[Claim(s)]

[Claim 1] When it stops receiving the infrared radiation with which an infrared receiving means to receive the infrared radiation sent from the predetermined source of dispatch, and this infrared receiving means are sent from said predetermined source of dispatch, A lock means to hold in the condition of having closed a part for the covering device arranged free [ closing motion into the body part which has held the circuit apparatus ], Small electronic equipment characterized by providing the lock discharge means which cancels the lock of this lock means and enables closing motion of a part for said covering device when the password entered from the outside is in agreement with the value set up beforehand.

[Claim 2] An infrared receiving means to receive the infrared radiation sent from the predetermined source of dispatch, and an anti-theft mode setting means to set it as the anti-theft mode for theft prevention of equipment, When it stops receiving the infrared radiation with which said infrared receiving means is sent from said predetermined source of dispatch after this anti-theft mode setting means has set it as anti-theft mode, The lock means which closed a part for the covering device arranged free [ closing motion into the body part which has held the circuit apparatus ] and which carries out condition maintenance, Small electronic equipment characterized by providing the lock discharge means which cancels the lock of this lock means and enables closing motion of a part for said covering device when the password entered from the outside is in agreement with the value set up beforehand.

[Claim 3] The password entered from said outside is small electronic equipment according to claim 1 or 2 characterized by being inputted by infrared radiation from the remote controller of a pocket mold.

[Claim 4] It is small electronic equipment according to claim 1 or 2 characterized by for the body part which has held the circuit apparatus consisting of a metal case where it has the opening-a-school section which carried out opening only of the one direction, and the amount of said covering device consisting of a display of the structure of making this opening opening and closing.

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the small electronic equipment which equipped the detail with the infrared device for a communication link with respect to a portable computer or the possible small electronic equipment of carrying like a small information terminal.

[0002]

[Description of the Prior Art] While high performance-ization of a computer progresses, many small electronic equipment, such as a portable computer which used the liquid crystal display, and an electronic notebook, has also appeared. Compared with the case where a large-sized CRT display not only with the field that it is only convenient to carry but depth, and the case for the bodies of a computer where a desktop type is large-scale are used, the area of a desk can be efficiently used especially for a portable computer. For this reason, recently, the example used as a substitute of a computer non-portable in office or a house is also increasing.

[0003] By the way, the small electronic equipment of such a portable mold does not ask whether there is any volition which the owner always places on the desk, but has essentially the weight and size which can be carried. It follows, for example, when it carries out without \*\*\*\*\* and goes home on an office desk, there is a possibility that the situation where a third person brings this freely may occur. In order to prevent the theft of the information which prevents such a situation represented by the theft and is stored in small electronic equipment etc., in the former, the approach of fastening these small electronic equipment to a column or a desk with a chain in the case of going home and the approach stripes locked into a desk were taken. However, as such a conventional cure, un-arranging [ that installation and removal of a chain are troublesome ], and when there was only no tooth space which can contain small electronic equipment in the drawer of a desk, there was a problem that it could not contain. Moreover, if a quite strong chain is not attached so that the theft of a bicycle may also see, a chain will be cut simply, and when it was going to attach the strong chain, there was a problem that there were no tooth space and reinforcement for the installation in a portable-computer side.

[0004] So, the technique which attached in the portable computer two kinds of sensors, P sensor which detects the installation pressure of a portable computer, and C sensor which detects an inclination, is indicated by JP,5-35355,A. The installation situation of the body of a computer is supervised using the detection output of these two sensors, and when change is detected, he is trying to intercept a power source with this technique. Moreover, as the key is locked in hardware in this case, use of future bodies is made impossible, and protection of internal information is also aimed at.

[0005] Drawing 11 expresses a control flow for protection of the portable computer by this JP,5-35355,A. If carrying out of this portable computer by the unjust person is detected after the monitoring system of a portable computer is connected (step S101) (step S102), while monitoring system will intercept (step S103), a buzzer carries out singing (step S104). And the system of a portable computer will intercept (step S105), use of the computer will become impossible, and protection of internal information will be achieved by this (step S106).

[0006] Moreover, continuously transmitting of the signal waves, such as an electric wave, infrared radiation, laser, and a supersonic wave, is carried out to JP,62-290997,A from the equipment carried on the body, and the receive section and the pronunciation circuit are arranged to possessions, such as a handbag arranged in the range which this signal wave can receive. If these possessions are forgotten or a theft is carried out by this, it will warn by a pronunciation circuit emitting a sound.

[0007] Furthermore, in JP,5-176374,A, personal computer supervisory equipment is in the condition that it can communicate by a subordinate's each personal computer and electric wave, and the installation of user ID, a password, and a personal computer etc. is transmitted in the case of starting of each personal computer. Personal computer supervisory equipment checks the received signal, and he is trying to transmit a licence signal to the personal computer in the state of licence. Moreover, since the use is not permitted in the case of a personal computer which was unjustly acquired from other locations but the power source of a personal computer is maintained at an off condition, protection of the contents of the file is also achieved.

[0008]

[Problem(s) to be Solved by the Invention] Among these, if the situation whose people are not in the surroundings like [ in the case of being ] after office all the members go home, even if a buzzer carries out singing with the technique indicated by JP,5-35355,A, and a loudspeaker are closed or it is made to put into containers, such as the back who was excellent in the effect of intercepting noise in the portable computer, it can carry easily and is inadequate in respect of security. Moreover, even if it intercepts a power source and changes a portable computer compulsorily into the condition that it cannot operate, this can be easily decomposed after a theft. Therefore, if storages, such as a hard disk, are sampled from the interior of a body, the important data stored in this can be read and insurance of security cannot be planned completely. Furthermore, since many of these components can be shared to a computer, expensive components may be used for others or may be sold.

[0009] Moreover, with the technique indicated by JP,62-290997,A, since the owner itself separates distantly [ possessions /, such as a portable computer, ] by going home etc., it is necessary to call off an alarm at this time. That is, since this proposal is applied only to what an owner carries as one, it is inapplicable to what it leaves to office. Of course, if it leaves the equipment carried on the body near the possessions, such as a portable computer, last situation can be supervised only with possessions, but if it has these away together, an alarm will not occur.

[0010] Furthermore, with the technique indicated by JP,5-176374,A, if it is going to use it, carrying a stolen article into the office where personal computer supervisory equipment is used, to be sure, use of the personal computer can be forbidden, or it can distinguish that it is a stolen article. However, in such a case, it should be called the entire rare case, and any problem is not generated, either, although the personal computer is used in a house or other locations. Moreover, since the measure of preventing the theft itself is not taken, it is completely free to have the personal computer itself away.

[0011] Then, even if the purpose of this invention leaves small electronic equipment to desk superiors, can prevent this from a theft and has small electronic equipment moreover carried, it is to offer the small electronic equipment which can prevent omission of information effectively.

[0012]

[Means for Solving the Problem] an infrared receiving means to receive the infrared radiation sent from the (b) predetermined source of dispatch in invention according to claim 1, and (b), when it stops receiving the infrared radiation with which this infrared receiving means is sent from said predetermined source of dispatch carried out A lock means to hold in the condition of having closed a part for the covering device arranged free [ closing motion into the body part which has held the circuit apparatus ], (Ha) When the password entered from the outside is in agreement with the value set up beforehand, small electronic equipment is made to possess the lock discharge means which cancels the lock of this lock means and enables closing motion of a part for a covering device.

[0013] Namely, when it stops receiving the infrared radiation sent in invention according to claim 1 from the predetermined source of dispatch which the infrared receiving means described above, Unless it will hold in the condition of having closed a part for the covering device arranged free [ closing

motion into the body part which has held the circuit apparatus ] and this lock is canceled using a password, it prevents from opening a part for a covering device, and decomposition of the small electronic equipment by the third person is made impossible.

[0014] An infrared receiving means to receive the infrared radiation sent from the (b) predetermined source of dispatch in invention according to claim 2, An anti-theft mode setting means to set it as the anti-theft mode for theft prevention of (b) equipment, When it stops receiving the infrared radiation with which this anti-theft mode setting means is sent from the predetermined source of dispatch which the infrared receiving means described above in the condition of having set it as anti-theft mode, (Ha) The lock means which closed a part for the covering device arranged free [ closing motion into the body part which has held the circuit apparatus ] and which carries out condition maintenance, When the password entered from the (d) outside is in agreement with the value set up beforehand, small electronic equipment is made to possess the lock discharge means which cancels the lock of this lock means and enables closing motion of a part for a covering device.

[0015] Namely, when it stops receiving the infrared radiation with which an infrared receiving means is sent from the predetermined source of dispatch after the invention hand according to claim 2 has set small electronic equipment as anti-theft mode, Unless it makes it the thing which closed a part for the covering device arranged free [ closing motion into the body part which has held the circuit apparatus ] and to do for condition maintenance and this lock is canceled using a password, it prevents from opening a part for a covering device, and decomposition of the small electronic equipment by the third person is made impossible. Thus, it enables it to turn on and off the function for theft prevention of small electronic equipment by the existence of a setup in anti-theft mode.

[0016] In invention according to claim 3, it is characterized by the password entered from the outside being entered by infrared radiation from the remote controller of a pocket mold in invention according to claim 1 or 2. Thus, also when the remote controller of a pocket mold was owned, this small electronic equipment can be carried out outside and this is forgotten at a going-out place etc., it can avoid un-arranging -- the theft of the information is carried out.

[0017] In invention according to claim 4, it is characterized by for the body part which has held the circuit apparatus consisting of a metal case where it has the opening-a-school section which carried out opening only of the one direction, and the amount of covering device consisting of a display of the structure of making this opening opening and closing in invention according to claim 1 or 2. Since it becomes impossible to remove a circuit apparatus from a body part when a part for a covering device is locked and it stops opening by this, informational leakage can be prevented.

[0018]

[Embodiment of the Invention]

[0019]

[Example] This invention is explained to a detail per example below.

[0020] Drawing 1 expresses the outline of the circuitry of a portable computer as small electronic equipment in one example of this invention. This portable computer 10 is constituted by the amount of [ which has been arranged by the hinge device 12 free / closing motion / to the body 11 of a computer, and this body 11 of a computer / 13 ] covering device. The liquid crystal display (LCD) 14 is built into the side which meets the body 11 of a computer at a part for a covering device 13.

[0021] The D-D (digital-digital) converter 21 for inputting DC power supply in the body 11 of a computer, and changing this into a desired electrical potential difference, The current supply circuit 22 for supplying the direct current voltage obtained from this D-D converter 21 to each circuit inside the body 11 of a computer, The dc-battery 23 for performing current supply by the built-in power source, and one pair of lock devices 24 and 25 for locking actuation of a liquid crystal display 14 in a predetermined case, It consists of body side infrared function parts 28 for connecting with the LCD lock control circuit 27 and this LCD lock control circuit 27 for controlling these lock devices 24 and 25, and performing infrared ray communication. Moreover, in the exterior of the body 11 of a computer, the AC (alternating current) adapter 31 for supplying DC power supply is arranged at the D-D converter 21, and it connects with the source power supply 32. Moreover, the infrared function part 33 outside a body and

the infrared-ray-communication remote controller (remote control) 34 are prepared for the portable computer 10 as an ancillary device, and the infrared function part 33 outside a body is connected to the source power supply 32 for current supply.

[0022] A dc-battery 23 is in the condition that AC adapter 31 is not connected to the source power supply 32, while supplying a power source to the memory explained to the back in this portable computer 10 and aiming at informational maintenance, a power source is supplied to the body side infrared function part 28 in the condition that the portable computer 10 is set as anti-theft mode, and the condition that control for preventing a theft is performed is realized. Moreover, if a power source becomes off in the condition that the portable computer 10 is set as anti-theft mode, the LCD lock control circuit 27 operates, and when a part for a covering device 13 is closed, it will be held in the condition.

[0023] Drawing 2 expresses the appearance of the portable computer of this example. The 1st and 2nd metal hooks 41 and 42 are attached in both upside corners in drawing for a covering device 13 of a portable computer 10, and the 1st for making these hang on the part where the body 11 of a computer corresponds, and the 2nd hanging hole 43 and 44 are dug. Moreover, the locking lever 46 for canceling the lock of a portable computer 10 and the insertion hole 53 for making the metallic ornaments 52 at the tip of a chain 51 insert in this portable computer 10 are dug by the right lateral 45 of the body 11 of a computer. Furthermore, in the front face 55 of the body 11 of a computer, the aperture 56 for infrared transmission and reception of the body side infrared function part 28 is arranged. Although not shown in this drawing, the locking lever 46 is arranged similarly at the left lateral of the body 11 of a computer.

[0024] Drawing 3 expresses components arrangement of the condition data which disassembled the portable computer. This portable computer 10 is enabling closing motion of a part for a covering device 13 to the body 11 of a computer according to the above mentioned hinge device 12. The hinge device 12 is constituted by 1 pair of tubed metallic-ornaments 12A arranged at the body 11 side of a computer, and pin 12B which is prepared in a part side for a covering device 13, and fits loosely into metallic-ornaments 12A tubed [ these ]. The hinge device 12 which the assembly ended covers opening of the front face with the protection lid 57 so that hinge device 12 itself may not be destroyed in the condition of having closed for the covering device [ 13 ].

[0025] The body 11 of a computer attaches the passive circuit elements of a dc-battery 23, a hard disk 62, the body side infrared function part 28, and memory device 63 grade in the interior base of case 61 of a core box which consists of a metal of the amounts of gravities, such as titanium. The keyboard section 64 is fixed to a case 61 by the upper part of a case 61 with a screw 65. There is a certain amount of thickness in the side attachment wall of a case 61, and the holes 43 and 44 for hanging for inserting and hanging the 1st or 2nd corresponding hook 41 and 42 on the location of the right above of a locking lever 46 are dug.

[0026] The portable computer 10 of this example is hung on the hanging metallic ornaments which the locking lever 46 inserted in the hole 67 for hanging will explain later if a part for a covering device 13 is closed in the condition of being set as anti-theft mode, and it has structure locked. Moreover, the case 61 serves as one apparatus and the structure which attached the bottom plate with the screw has not become. Therefore, a screw 65 cannot be removed, unless it cannot disassemble a portable computer 10 from the bottom side of the body 11 of a computer and a part for a covering device 13 is opened in the state of the lock of a portable computer 10. That is, it is impossible to remove the keyboard section 64 and to carry out the internal components of hard disk 62 grade.

[0027] Drawing 4 expresses the condition that the amount of [ of this portable computer ] covering device closed. said -- if a part for a covering device 13 is closed as carried out -- the front of the protection lid 57 by the side of the body 11 of a computer -- a part for a covering device 13 -- a wrap -- it becomes like. Therefore, in the condition of having been locked in anti-theft mode, a portable computer 10 can remove the protection lid 57, cannot separate a part for the body 11 of a computer, and a covering device 13, and cannot decompose the interior of a portable computer 10 by the technique of both separation, either.

[0028] Drawing 5 expresses the condition that the device part of a lock device was canceled, and

drawing 6 expresses the condition of the lock device having operated and having changed into the lock condition. The locking lever 46 is connected in the form which fits in a slot 75 loosely to the hanging metallic ornaments 73 by which the connecting fitting 72 projected towards the body of computer 11 interior from the base has been arranged for the 2nd hanging hole 44 shown in drawing 5 or drawing 6, enabling free sliding. Therefore, if the metal locking lever 46 moves in the arrow-head 71 direction, the hanging metallic ornaments 73 will also move as this and one in the interior of the 2nd hanging hole 44. In addition, drawing 5 and drawing 6 show the right lateral 45 of a portable computer 10, and enter. Although it will negotiate with the 1st hook 41 by which the 1st hanging metallic ornaments 43 (refer to drawing 3) correspond in a left lateral, since this relation is completely the same as that of the case of the 2nd hook 42, this explanation is given to omit.

[0029] The upper part of the hanging metallic ornaments 73 constitutes key part 73A which bent at the right angle so that the 2nd hook 42 laid under a part for a covering device in part might be hung. Therefore, if a locking lever 46 is moved in the direction (it is the right in drawing) which keeps away from the 2nd hook 42 inside the 2nd hanging hole 44 to a marginal location against the reaction of the spring which is not illustrated as shown in drawing 5, the 2nd hook 42 can be inserted in the 2nd hanging hole 44, and as shown in drawing 3, a part for a covering device 13 can be closed completely. In this condition, if an operator lifts a hand from a locking lever 46, the tip of the 2nd hook 42 will fit into a part for the concave of key part 73A according to the return force of the above mentioned spring. A part for the covering device 13 of a portable computer 10 will be locked by this.

[0030] However, in the condition that the portable computer 10 is not set as anti-theft mode, an operator can move a locking lever 46 in the arrow-head 71 direction freely. That is, the hanging condition over the hanging metallic ornaments 73 of the 2nd hook 42 can be canceled at any time, and a part for a covering device 13 can be opened as shown in drawing 2. In being set as anti-theft mode and entering, in order for a locking lever 46 to be in the condition that it cannot move in the arrow-head 71 direction so that it may explain below and to cancel this lock condition, it is necessary to agree on the following two conditions.

[0031] \*\* Be in the environment which can communicate with the infrared function part 33 outside a body shown in drawing 1. That is, like [ when the portable computer 10 of this example is able to have away from a desk ], when it becomes impossible for the body side infrared function part 28 to communicate with the infrared function part 33 outside a body, this lock condition cannot be canceled.

[0032] \*\* Enter the password beforehand set to the portable-computer 10 side from the infrared-ray-communication remote controller 34 shown in drawing 1. That is, a lock condition cannot be canceled, if a password is entered from the infrared-ray-communication remote controller 34 and this is not in agreement, even if it is going to operate a locking lever 46 in the location in which the portable computer 10 is installed even if.

[0033] The LCD lock control circuit 27 shown in drawing 1 R> 1 performs control of such discharge of a lock condition. And the above mentioned conditions are not fulfilled but one pair of lock devices 24 and 25 shown in drawing 1 prevent migration of the hanging metallic ornaments 73 electrically in the condition that discharge of a lock is not permitted. Such a device can recognize various existence.

[0034] For example, the lock devices 24 and 25 are equipped with the solenoid, and move the plunger which is not illustrated according to turning on and off of a power source. The hole which inserts a part for the point of this plunger has opened in the hanging metallic ornaments 73 shown in drawing 5 and drawing 6, and a part for a point and this hole of a plunger are set as the location which faced each other exactly in the state of the lock shown in drawing 6. Therefore, if it is made for the amount of [ of a plunger ] point to insert in this hole in the condition that the portable computer 10 is set as anti-theft mode, migration of the hanging metallic ornaments 73 can be prevented and a lock condition can be continued.

[0035] Drawing 7 expresses the important section of the circuitry of the portable computer of this example. This portable computer 10 is equipped with CPU (central processing unit)81 for performing various control. CPU81 is connected with each part in equipment through the buses 82, such as a data bus. Among these, ROM63A is the read only memory which stored that for controlling each part of this

portable computer 10. Moreover, RAM63B is the working-level month memory for storing various data temporarily, and is constituted by random access memory. It connects with the bus 82 through the input circuit 83, and the keyboard section 64 keys various data. A hard disk 62 is connected to a bus 82 through the disk control circuits 85, such as a SCSI card, and the program for data, such as a drawn-up document, or various control is stored. The body side infrared function part 28 and the lock devices 24 and 25 are also connected to the bus 82.

[0036] Drawing 8 expresses control of the power up of the beginning after purchasing this portable computer. In addition, the thing concerning the body 11 side of a computer is realized by other control explained to this control and the back by executing the program stored in ROM63A or the hard disk shown in drawing 7.

[0037] First, if the power source of a portable computer 10 is switched on first (step S201:Y), the setting demand of a password will be displayed on the liquid crystal display 14 shown in drawing 2 (step S202). In addition, since the lock device in which it explains in detail later is not operating when a portable computer 10 is purchased, an operator can open a part for a covering device 13, and can operate a key. If an operator enters a password (step S203:Y), CPU81 will display the setting demand of whether anti-theft mode is set as ON, or to set up off on a liquid crystal display 14 next. If it is set as one of operators (step S205:Y), CPU81 will stand by the time of the power source of a portable computer 10 being turned off by software after this (step S206). And when a power source is turned OFF, the on-off information on the anti-theft mode stored in the nonvolatile memory field of (step S206:Y) and RAM63B is read. Consequently, when set as anti-theft mode, (step S207:Y) and a lock device are operated. That is, this is locked after the amount of [ 13 ] covering device has closed. When not set as anti-theft mode, processing is terminated, without operating (step S207:N) and a lock device (end).

[0038] Drawing 9 expresses the work flow for canceling a lock temporarily in the anti-theft mode in which the lock device is operating. In the condition that the lock device is operating as already explained, it becomes being in the condition that a part for a covering device 13 was closed with as. In order to cancel this condition, it is necessary to send out a password to a portable computer 10 from the infrared-ray-communication remote controller 34 shown in drawing 1. If a password is sent out, the body side infrared function part 28 will receive this (step S301). CPU81 is compared with the registered password in which the received password is stored to the nonvolatile memory field of RAM63B (step S302). And if both are in agreement (step S303:Y), the owner of the portable computer 10 will cancel a lock device as what operated discharge (step S304). On the other hand, when the sent-out password is wrong, discharge of (step S303:N) and a lock device is not performed.

[0039] Drawing 10 expresses the situation of control at the time of having a portable computer away. It has the portable computer 10 of this example freely from desk superiors by inserting the metallic ornaments 52 at the tip of a chain 51 in the insertion hole 53 of a portable computer 10, as shown in drawing 2, and it has come to be unable to do last thing. However, when there are those who are going to have a portable computer 10 away in spite of this, the use and disassembly of the body 11 of a computer can be prevented.

[0040] That is, the infrared radiation which included predetermined ID information from the infrared function part 33 outside a body which showed CPU81 to drawing 1 is supervising whether it is always transmitted to the body side infrared function part 28 in anti-theft mode (step S401). Identity of ID information is checked for those who had a portable computer 10 away not escaping detection of having had away by receiving infrared radiation from the same infrared function part 33 outside a body. However, it is enough even if it is those who confirm whether infrared radiation is simply received depending on the check system for theft prevention.

[0041] Even if case or received, when [ by which infrared radiation was not received by the infrared function part 28 ] ID information is different, as for CPU81, a portable computer 10 distinguishes whether power-source OFF has come by software (step S402). The alarm tone at (Y) and a buzzer is generated (step S403), a lock device is operated (step S404), and it is preventing from the amount of [ of a portable computer 10 / 13 ] covering device opening in the condition that a power source is off.

[0042] In the condition that a power source is not off, (step S402:Y) and the alarm display which directs

to return a portable computer 10 to the original location at this time are performed (step S405). An alarm display may be performed by displaying a phrase and a picture on a liquid crystal display 14, and singing of the buzzer may be carried out or you may make it output the voice for warning. An alarm display will not be performed, if it returns to the original location before going through the predetermined time amount  $t$  when it seems that the original owner of a portable computer 10 moved this to other locations by a certain reason (step S406: N).

[0043] On the other hand, even if predetermined time amount passes, when a portable computer 10 is not returned to the original location, there is possibility of a theft. Then, when time amount  $t$  passes, it is confirmed whether still more nearly same ID information is received (step S407). When the same ID information is used, it means that (Y) and a portable computer 10 were arranged in the location which should usually be arranged. Therefore, processing is terminated, without operating a lock device, since the theft has not occurred in this case (end).

[0044] On the other hand, when time amount  $t$  passes, even if infrared radiation is not detected or it is detected, when ID information is not the same (step S407: N), the power source of a portable computer 10 is intercepted by software (step S408). And where a part for the covering device 13 of this portable computer 10 is closed, this is locked (step S404), and it prevents from disassembling the body 11 of a computer.

[0045] In addition, the portable computer 10 of this example can perform a discharge setup in anti-theft mode a condition [ a password being in agreement ] in the condition of operating this. Therefore, when bringing this portable computer 10 to a going-out place, the monitor of carrying out by the communication link of infrared radiation with the infrared function part 33 outside a body can be canceled by canceling anti-theft mode. Thus, when carrying a portable computer 10, a computer can be started also in the time of a setup in anti-theft mode by going with the infrared-ray-communication remote controller 34.

[0046] Moreover, when a power source becomes OFF simply instead of the control explained by drawing 10, you can also make it shift to the mode which operates a lock device, in carrying a portable computer 10 in this way. When it was set as such the special mode and the portable computer 10 is forgotten, a third person cannot open a part for the covering device 13, but can secure security.

[0047]

[Effect of the Invention] Since it decided to hold in the condition closed a part for the covering device arranged free [ closing motion into the body part which has held the circuit apparatus ] when it stopped having received the infrared radiation with which an infrared receiving means is sent from the predetermined source of dispatch according to invention according to claim 1 as explained above, the effectiveness of theft prevention can be easily heightened using the means of communications of the infrared radiation with which many of small electronic equipment is equipped. And since it prevented from opening a part for a covering device unless this lock was canceled using the password, access of small electronic equipment and carrying out of components by the third person can be prevented.

[0048] Moreover, according to invention according to claim 2, since on-off control in anti-theft mode can be performed, in carrying out joint use of the small electronic equipment in the environment which a theft cannot generate easily, in case it opens a part for the covering device of this small electronic equipment, it is not necessary to complete a special procedure, and there is an advantage that the function of a device can be properly used according to an environment.

[0049] Furthermore, also when according to invention according to claim 3 the remote controller of a pocket mold was owned, this small electronic equipment can be carried out outside and this is forgotten at a going-out place etc., it can avoid un-arranging -- the theft of the information is carried out.

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TECHNICAL FIELD

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[Field of the Invention] This invention relates to the small electronic equipment which equipped the detail with the infrared device for a communication link with respect to a portable computer or the possible small electronic equipment of carrying like a small information terminal.

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PRIOR ART

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[Description of the Prior Art] While high performance-ization of a computer progresses, many small electronic equipment, such as a portable computer which used the liquid crystal display, and an electronic notebook, has also appeared. Compared with the case where a large-sized CRT display not only with the field that it is only convenient to carry but depth, and the case for the bodies of a computer where a desktop type is large-scale are used, the area of a desk can be efficiently used especially for a portable computer. For this reason, recently, the example used as a substitute of a computer non-portable in office or a house is also increasing.

[0003] By the way, the small electronic equipment of such a portable mold does not ask whether there is any volition which the owner always places on the desk, but has essentially the weight and size which can be carried. It follows, for example, when it carries out without \*\*\*\*\* and goes home on an office desk, there is a possibility that the situation where a third person brings this freely may occur. In order to prevent the theft of the information which prevents such a situation represented by the theft and is stored in small electronic equipment etc., in the former, the approach of fastening these small electronic equipment to a column or a desk with a chain in the case of going home and the approach stripes locked into a desk were taken. However, as such a conventional cure, un-arranging [ that installation and removal of a chain are troublesome ], and when there was only no tooth space which can contain small electronic equipment in the drawer of a desk, there was a problem that it could not contain. Moreover, if a quite strong chain is not attached so that the theft of a bicycle may also see, a chain will be cut simply, and when it was going to attach the strong chain, there was a problem that there were no tooth space and reinforcement for the installation in a portable-computer side.

[0004] So, the technique which attached in the portable computer two kinds of sensors, P sensor which detects the installation pressure of a portable computer, and C sensor which detects an inclination, is indicated by JP,5-35355,A. The installation situation of the body of a computer is supervised using the detection output of these two sensors, and when change is detected, he is trying to intercept a power source with this technique. Moreover, as the key is locked in hardware in this case, use of future bodies is made impossible, and protection of internal information is also aimed at.

[0005] Drawing 11 expresses a control flow for protection of the portable computer by this JP,5-35355,A. If carrying out of this portable computer by the unjust person is detected after the monitoring system of a portable computer is connected (step S101) (step S102), while monitoring system will intercept (step S103), a buzzer carries out singing (step S104). And the system of a portable computer will intercept (step S105), use of the computer will become impossible, and protection of internal information will be achieved by this (step S106).

[0006] Moreover, continuously transmitting of the signal waves, such as an electric wave, infrared radiation, laser, and a supersonic wave, is carried out to JP,62-290997,A from the equipment carried on the body, and the receive section and the pronunciation circuit are arranged to possessions, such as a handbag arranged in the range which this signal wave can receive. If these possessions are forgotten or a theft is carried out by this, it will warn by a pronunciation circuit emitting a sound.

[0007] Furthermore, in JP,5-176374,A, personal computer supervisory equipment is in the condition that

it can communicate by a subordinate's each personal computer and electric wave, and the installation of user ID, a password, and a personal computer etc. is transmitted in the case of starting of each personal computer. Personal computer supervisory equipment checks the received signal, and he is trying to transmit a licence signal to the personal computer in the state of licence. Moreover, since the use is not permitted in the case of a personal computer which was unjustly acquired from other locations but the power source of a personal computer is maintained at an off condition, protection of the contents of the file is also achieved.

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EFFECT OF THE INVENTION

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[Effect of the Invention] Since it decided to hold in the condition closed a part for the covering device arranged free [ closing motion into the body part which has held the circuit apparatus ] when it stopped having received the infrared radiation with which an infrared receiving means is sent from the predetermined source of dispatch according to invention according to claim 1 as explained above, the effectiveness of theft prevention can be easily heightened using the means of communications of the infrared radiation with which many of small electronic equipment is equipped. And since it prevented from opening a part for a covering device unless this lock was canceled using the password, access of small electronic equipment and carrying out of components by the third person can be prevented. [0048] Moreover, according to invention according to claim 2, since on-off control in anti-theft mode can be performed, in carrying out joint use of the small electronic equipment in the environment which a theft cannot generate easily, in case it opens a part for the covering device of this small electronic equipment, it is not necessary to complete a special procedure, and there is an advantage that the function of a device can be properly used according to an environment. [0049] Furthermore, also when according to invention according to claim 3 the remote controller of a pocket mold was owned, this small electronic equipment can be carried out outside and this is forgotten at a going-out place etc., it can avoid un-arranging -- the theft of the information is carried out.

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TECHNICAL PROBLEM

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[Problem(s) to be Solved by the Invention] Among these, if the situation whose people are not in the surroundings like [ in the case of being ] after office all the members go home, even if a buzzer carries out singing with the technique indicated by JP,5-35355,A, and a loudspeaker are closed or it is made to put into containers, such as the back who was excellent in the effect of intercepting noise in the portable computer, it can carry easily and is inadequate in respect of security. Moreover, even if it intercepts a power source and changes a portable computer compulsorily into the condition that it cannot operate, this can be easily decomposed after a theft. Therefore, if storages, such as a hard disk, are sampled from the interior of a body, the important data stored in this can be read and insurance of security cannot be planned completely. Furthermore, since many of these components can be shared to a computer, expensive components may be used for others or may be sold.

[0009] Moreover, with the technique indicated by JP,62-290997,A, since the owner itself separates distantly [ possessions /, such as a portable computer, ] by going home etc., it is necessary to call off an alarm at this time. That is, since this proposal is applied only to what an owner carries as one, it is inapplicable to what it leaves to office. Of course, if it leaves the equipment carried on the body near the possessions, such as a portable computer, last situation can be supervised only with possessions, but if it has these away together, an alarm will not occur.

[0010] Furthermore, with the technique indicated by JP,5-176374,A, if it is going to use it, carrying a stolen article into the office where personal computer supervisory equipment is used, to be sure, use of the personal computer can be forbidden, or it can distinguish that it is a stolen article. However, in such a case, it should be called the entire rare case, and any problem is not generated, either, although the personal computer is used in a house or other locations. Moreover, since the measure of preventing the theft itself is not taken, it is completely free to have the personal computer itself away.

[0011] Then, even if the purpose of this invention leaves small electronic equipment to desk superiors, can prevent this from a theft and has small electronic equipment moreover carried, it is to offer the small electronic equipment which can prevent omission of information effectively.

[0012]

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MEANS

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[Means for Solving the Problem] an infrared receiving means to receive the infrared radiation sent from the (b) predetermined source of dispatch in invention according to claim 1, and (b), when it stops receiving the infrared radiation with which this infrared receiving means is sent from said predetermined source of dispatch carried out A lock means to hold in the condition of having closed a part for the covering device arranged free [ closing motion into the body part which has held the circuit apparatus ], (Ha) When the password entered from the outside is in agreement with the value set up beforehand, small electronic equipment is made to possess the lock discharge means which cancels the lock of this lock means and enables closing motion of a part for a covering device.

[0013] Namely, when it stops receiving the infrared radiation sent in invention according to claim 1 from the predetermined source of dispatch which the infrared receiving means described above, Unless it will hold in the condition of having closed a part for the covering device arranged free [ closing motion into the body part which has held the circuit apparatus ] and this lock is canceled using a password, it prevents from opening a part for a covering device, and decomposition of the small electronic equipment by the third person is made impossible.

[0014] An infrared receiving means to receive the infrared radiation sent from the (b) predetermined source of dispatch in invention according to claim 2, An anti-theft mode setting means to set it as the anti-theft mode for theft prevention of (b) equipment, When it stops receiving the infrared radiation with which this anti-theft mode setting means is sent from the predetermined source of dispatch which the infrared receiving means described above in the condition of having set it as anti-theft mode, (Ha) The lock means which closed a part for the covering device arranged free [ closing motion into the body part which has held the circuit apparatus ] and which carries out condition maintenance, When the password entered from the (d) outside is in agreement with the value set up beforehand, small electronic equipment is made to possess the lock discharge means which cancels the lock of this lock means and enables closing motion of a part for a covering device.

[0015] Namely, when it stops receiving the infrared radiation with which an infrared receiving means is sent from the predetermined source of dispatch after the invention hand according to claim 2 has set small electronic equipment as anti-theft mode, Unless it makes it the thing which closed a part for the covering device arranged free [ closing motion into the body part which has held the circuit apparatus ] and to do for condition maintenance and this lock is canceled using a password, it prevents from opening a part for a covering device, and decomposition of the small electronic equipment by the third person is made impossible. Thus, it enables it to turn on and off the function for theft prevention of small electronic equipment by the existence of a setup in anti-theft mode.

[0016] In invention according to claim 3, it is characterized by the password entered from the outside being entered by infrared radiation from the remote controller of a pocket mold in invention according to claim 1 or 2. Thus, also when the remote controller of a pocket mold was owned, this small electronic equipment can be carried out outside and this is forgotten at a going-out place etc., it can avoid un-arranging -- the theft of the information is carried out.

[0017] In invention according to claim 4, it is characterized by for the body part which has held the

circuit apparatus consisting of a metal case where it has the opening-a-school section which carried out opening only of the one direction, and the amount of covering device consisting of a display of the structure of making this opening opening and closing in invention according to claim 1 or 2. Since it becomes impossible to remove a circuit apparatus from a body part when a part for a covering device is locked and it stops opening by this, informational leakage can be prevented.

[0018]

[Embodiment of the Invention]

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EXAMPLE

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[Example] This invention is explained to a detail per example below.

[0020] Drawing 1 expresses the outline of the circuitry of a portable computer as small electronic equipment in one example of this invention. This portable computer 10 is constituted by the amount of [ which has been arranged by the hinge device 12 free / closing motion / to the body 11 of a computer, and this body 11 of a computer / 13 ] covering device. The liquid crystal display (LCD) 14 is built into the side which meets the body 11 of a computer at a part for a covering device 13.

[0021] The D-D (digital-digital) converter 21 for inputting DC power supply in the body 11 of a computer, and changing this into a desired electrical potential difference, The current supply circuit 22 for supplying the direct current voltage obtained from this D-D converter 21 to each circuit inside the body 11 of a computer, The dc-battery 23 for performing current supply by the built-in power source, and one pair of lock devices 24 and 25 for locking actuation of a liquid crystal display 14 in a predetermined case, It consists of body side infrared function parts 28 for connecting with the LCD lock control circuit 27 and this LCD lock control circuit 27 for controlling these lock devices 24 and 25, and performing infrared ray communication. Moreover, in the exterior of the body 11 of a computer, the AC (alternating current) adapter 31 for supplying DC power supply is arranged at the D-D converter 21, and it connects with the source power supply 32. Moreover, the infrared function part 33 outside a body and the infrared-ray-communication remote controller (remote control) 34 are prepared for the portable computer 10 as an ancillary device, and the infrared function part 33 outside a body is connected to the source power supply 32 for current supply.

[0022] A dc-battery 23 is in the condition that AC adapter 31 is not connected to the source power supply 32, while supplying a power source to the memory explained to the back in this portable computer 10 and aiming at informational maintenance, a power source is supplied to the body side infrared function part 28 in the condition that the portable computer 10 is set as anti-theft mode, and the condition that control for preventing a theft is performed is realized. Moreover, if a power source becomes off in the condition that the portable computer 10 is set as anti-theft mode, the LCD lock control circuit 27 operates, and when a part for a covering device 13 is closed, it will be held in the condition.

[0023] Drawing 2 expresses the appearance of the portable computer of this example. The 1st and 2nd metal hooks 41 and 42 are attached in both upside corners in drawing for a covering device 13 of a portable computer 10, and the 1st for making these hang on the part where the body 11 of a computer corresponds, and the 2nd hanging hole 43 and 44 are dug. Moreover, the locking lever 46 for canceling the lock of a portable computer 10 and the insertion hole 53 for making the metallic ornaments 52 at the tip of a chain 51 insert in this portable computer 10 are dug by the right lateral 45 of the body 11 of a computer. Furthermore, in the front face 55 of the body 11 of a computer, the aperture 56 for infrared transmission and reception of the body side infrared function part 28 is arranged. Although not shown in this drawing, the locking lever 46 is arranged similarly at the left lateral of the body 11 of a computer.

[0024] Drawing 3 expresses components arrangement of the condition data which disassembled the portable computer. This portable computer 10 is enabling closing motion of a part for a covering device

13 to the body 11 of a computer according to the above mentioned hinge device 12. The hinge device 12 is constituted by 1 pair of tubed metallic-ornaments 12A arranged at the body 11 side of a computer, and pin 12B which is prepared in a part side for a covering device 13, and fits loosely into metallic-ornaments 12A tubed [ these ]. The hinge device 12 which the assembly ended covers opening of the front face with the protection lid 57 so that hinge device 12 itself may not be destroyed in the condition of having closed for the covering device [ 13 ].

[0025] The body 11 of a computer attaches the passive circuit elements of a dc-battery 23, a hard disk 62, the body side infrared function part 28, and memory device 63 grade in the interior base of case 61 of a core box which consists of a metal of the amounts of gravities, such as titanium. The keyboard section 64 is fixed to a case 61 by the upper part of a case 61 with a screw 65. There is a certain amount of thickness in the side attachment wall of a case 61, and the holes 43 and 44 for hanging for inserting and hanging the 1st or 2nd corresponding hook 41 and 42 on the location of the right above of a locking lever 46 are dug.

[0026] The portable computer 10 of this example is hung on the hanging metallic ornaments which the locking lever 46 inserted in the hole 67 for hanging will explain later if a part for a covering device 13 is closed in the condition of being set as anti-theft mode, and it has structure locked. Moreover, the case 61 serves as one apparatus and the structure which attached the bottom plate with the screw has not become. Therefore, a screw 65 cannot be removed, unless it cannot disassemble a portable computer 10 from the bottom side of the body 11 of a computer and a part for a covering device 13 is opened in the state of the lock of a portable computer 10. That is, it is impossible to remove the keyboard section 64 and to carry out the internal components of hard disk 62 grade.

[0027] Drawing 4 expresses the condition that the amount of [ of this portable computer ] covering device closed. said -- if a part for a covering device 13 is closed as carried out -- the front of the protection lid 57 by the side of the body 11 of a computer -- a part for a covering device 13 -- a wrap -- it becomes like. Therefore, in the condition of having been locked in anti-theft mode, a portable computer 10 can remove the protection lid 57, cannot separate a part for the body 11 of a computer, and a covering device 13, and cannot decompose the interior of a portable computer 10 by the technique of both separation, either.

[0028] Drawing 5 expresses the condition that the device part of a lock device was canceled, and drawing 6 expresses the condition of the lock device having operated and having changed into the lock condition. The locking lever 46 is connected in the form which fits in a slot 75 loosely to the hanging metallic ornaments 73 by which the connecting fitting 72 projected towards the body of computer 11 interior from the base has been arranged for the 2nd hanging hole 44 shown in drawing 5 or drawing 6 , enabling free sliding. Therefore, if the metal locking lever 46 moves in the arrow-head 71 direction, the hanging metallic ornaments 73 will also move as this and one in the interior of the 2nd hanging hole 44. In addition, drawing 5 and drawing 6 show the right lateral 45 of a portable computer 10, and enter. Although it will negotiate with the 1st hook 41 by which the 1st hanging metallic ornaments 43 (refer to drawing 3 ) correspond in a left lateral, since this relation is completely the same as that of the case of the 2nd hook 42, this explanation is given to omit.

[0029] The upper part of the hanging metallic ornaments 73 constitutes key part 73A which bent at the right angle so that the 2nd hook 42 laid under a part for a covering device in part might be hung. Therefore, if a locking lever 46 is moved in the direction (it is the right in drawing) which keeps away from the 2nd hook 42 inside the 2nd hanging hole 44 to a marginal location against the reaction of the spring which is not illustrated as shown in drawing 5 , the 2nd hook 42 can be inserted in the 2nd hanging hole 44, and as shown in drawing 3 , a part for a covering device 13 can be closed completely. In this condition, if an operator lifts a hand from a locking lever 46, the tip of the 2nd hook 42 will fit into a part for the concave of key part 73A according to the return force of the above mentioned spring. A part for the covering device 13 of a portable computer 10 will be locked by this.

[0030] However, in the condition that the portable computer 10 is not set as anti-theft mode, an operator can move a locking lever 46 in the arrow-head 71 direction freely. That is, the hanging condition over the hanging metallic ornaments 73 of the 2nd hook 42 can be canceled at any time, and a part for a

covering device 13 can be opened as shown in drawing 2 . In being set as anti-theft mode and entering, in order for a locking lever 46 to be in the condition that it cannot move in the arrow-head 71 direction so that it may explain below and to cancel this lock condition, it is necessary to agree on the following two conditions.

[0031] \*\* Be in the environment which can communicate with the infrared function part 33 outside a body shown in drawing 1 . That is, like [ when the portable computer 10 of this example is able to have away from a desk ], when it becomes impossible for the body side infrared function part 28 to communicate with the infrared function part 33 outside a body, this lock condition cannot be canceled.

[0032] \*\* Enter the password beforehand set to the portable-computer 10 side from the infrared-ray-communication remote controller 34 shown in drawing 1 . That is, a lock condition cannot be canceled, if a password is entered from the infrared-ray-communication remote controller 34 and this is not in agreement, even if it is going to operate a locking lever 46 in the location in which the portable computer 10 is installed even if.

[0033] The LCD lock control circuit 27 shown in drawing 1 R> 1 performs control of such discharge of a lock condition. And the above mentioned conditions are not fulfilled but one pair of lock devices 24 and 25 shown in drawing 1 prevent migration of the hanging metallic ornaments 73 electrically in the condition that discharge of a lock is not permitted. Such a device can recognize various existence.

[0034] For example, the lock devices 24 and 25 are equipped with the solenoid, and move the plunger which is not illustrated according to turning on and off of a power source. The hole which inserts a part for the point of this plunger has opened in the hanging metallic ornaments 73 shown in drawing 5 and drawing 6 , and a part for a point and this hole of a plunger are set as the location which faced each other exactly in the state of the lock shown in drawing 6 . Therefore, if it is made for the amount of [ of a plunger ] point to insert in this hole in the condition that the portable computer 10 is set as anti-theft mode, migration of the hanging metallic ornaments 73 can be prevented and a lock condition can be continued.

[0035] Drawing 7 expresses the important section of the circuitry of the portable computer of this example. This portable computer 10 is equipped with CPU (central processing unit)81 for performing various control. CPU81 is connected with each part in equipment through the buses 82, such as a data bus. Among these, ROM63A is the read only memory which stored that for controlling each part of this portable computer 10. Moreover, RAM63B is the working-level month memory for storing various data temporarily, and is constituted by random access memory. It connects with the bus 82 through the input circuit 83, and the keyboard section 64 keys various data. A hard disk 62 is connected to a bus 82 through the disk control circuits 85, such as a SCSI card, and the program for data, such as a drawn-up document, or various control is stored. The body side infrared function part 28 and the lock devices 24 and 25 are also connected to the bus 82.

[0036] Drawing 8 expresses control of the power up of the beginning after purchasing this portable computer. In addition, the thing concerning the body 11 side of a computer is realized by other control explained to this control and the back by executing the program stored in ROM63A or the hard disk shown in drawing 7 .

[0037] First, if the power source of a portable computer 10 is switched on first (step S201:Y), the setting demand of a password will be displayed on the liquid crystal display 14 shown in drawing 2 (step S202). In addition, since the lock device in which it explains in detail later is not operating when a portable computer 10 is purchased, an operator can open a part for a covering device 13, and can operate a key. If an operator enters a password (step S203:Y), CPU81 will display the setting demand of whether anti-theft mode is set as ON, or to set up off on a liquid crystal display 14 next. If it is set as one of operators (step S205:Y), CPU81 will stand by the time of the power source of a portable computer 10 being turned off by software after this (step S206). And when a power source is turned OFF, the on-off information on the anti-theft mode stored in the nonvolatile memory field of (step S206:Y) and RAM63B is read. Consequently, when set as anti-theft mode, (step S207:Y) and a lock device are operated. That is, this is locked after the amount of [ 13 ] covering device has closed. When not set as anti-theft mode, processing is terminated, without operating (step S207:N) and a lock device (end).

[0038] Drawing 9 expresses the work flow for canceling a lock temporarily in the anti-theft mode in which the lock device is operating. In the condition that the lock device is operating as already explained, it becomes being in the condition that a part for a covering device 13 was closed with as. In order to cancel this condition, it is necessary to send out a password to a portable computer 10 from the infrared-ray-communication remote controller 34 shown in drawing 1. If a password is sent out, the body side infrared function part 28 will receive this (step S301). CPU81 is compared with the registered password in which the received password is stored to the nonvolatile memory field of RAM63B (step S302). And if both are in agreement (step S303:Y), the owner of the portable computer 10 will cancel a lock device as what operated discharge (step S304). On the other hand, when the sent-out password is wrong, discharge of (step S303:N) and a lock device is not performed.

[0039] Drawing 10 expresses the situation of control at the time of having a portable computer away. It has the portable computer 10 of this example freely from desk superiors by inserting the metallic ornaments 52 at the tip of a chain 51 in the insertion hole 53 of a portable computer 10, as shown in drawing 2, and it has come to be unable to do last thing. However, when there are those who are going to have a portable computer 10 away in spite of this, the use and disassembly of the body 11 of a computer can be prevented.

[0040] That is, the infrared radiation which included predetermined ID information from the infrared function part 33 outside a body which showed CPU81 to drawing 1 is supervising whether it is always transmitted to the body side infrared function part 28 in anti-theft mode (step S401). Identity of ID information is checked for those who had a portable computer 10 away not escaping detection of having had away by receiving infrared radiation from the same infrared function part 33 outside a body. However, it is enough even if it is those who confirm whether infrared radiation is simply received depending on the check system for theft prevention.

[0041] Even if case or received, when [ by which infrared radiation was not received by the infrared function part 28 ] ID information is different, as for CPU81, a portable computer 10 distinguishes whether power-source OFF has come by software (step S402). The alarm tone at (Y) and a buzzer is generated (step S403), a lock device is operated (step S404), and it is preventing from the amount of [ of a portable computer 10 / 13 ] covering device opening in the condition that a power source is off.

[0042] In the condition that a power source is not off, (step S402:Y) and the alarm display which directs to return a portable computer 10 to the original location at this time are performed (step S405). An alarm display may be performed by displaying a phrase and a picture on a liquid crystal display 14, and singing of the buzzer may be carried out or you may make it output the voice for warning. An alarm display will not be performed, if it returns to the original location before going through the predetermined time amount t when it seems that the original owner of a portable computer 10 moved this to other locations by a certain reason (step S406: N).

[0043] On the other hand, even if predetermined time amount passes, when a portable computer 10 is not returned to the original location, there is possibility of a theft. Then, when time amount t passes, it is confirmed whether still more nearly same ID information is received (step S407). When the same ID information is used, it means that (Y) and a portable computer 10 were arranged in the location which should usually be arranged. Therefore, processing is terminated, without operating a lock device, since the theft has not occurred in this case (end).

[0044] On the other hand, when time amount t passes, even if infrared radiation is not detected or it is detected, when ID information is not the same (step S407: N), the power source of a portable computer 10 is intercepted by software (step S408). And where a part for the covering device 13 of this portable computer 10 is closed, this is locked (step S404), and it prevents from disassembling the body 11 of a computer.

[0045] In addition, the portable computer 10 of this example can perform a discharge setup in anti-theft mode a condition [ a password being in agreement ] in the condition of operating this. Therefore, when bringing this portable computer 10 to a going-out place, the monitor of carrying out by the communication link of infrared radiation with the infrared function part 33 outside a body can be canceled by canceling anti-theft mode. Thus, when carrying a portable computer 10, a computer can be

started also in the time of a setup in anti-theft mode by going with the infrared-ray-communication remote controller 34.

[0046] Moreover, when a power source becomes OFF simply instead of the control explained by drawing 10, you can also make it shift to the mode which operates a lock device, in carrying a portable computer 10 in this way. When it was set as such the special mode and the portable computer 10 is forgotten, a third person cannot open a part for the covering device 13, but can secure security.

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DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is a block diagram showing the outline of the circuitry of the portable computer in one example of this invention.

[Drawing 2] It is the perspective view showing the condition of having opened a part for the covering device of the portable computer as small electronic equipment of one example of this invention.

[Drawing 3] It is a perspective view showing the components arrangement in the condition of having disassembled the portable computer of this example.

[Drawing 4] It is a perspective view showing the condition that the amount of [ of the portable computer of this example ] covering device closed.

[Drawing 5] It is the perspective view which expressed with this example the condition that the device part of a lock device was canceled.

[Drawing 6] It is the perspective view showing the condition of the lock device having operated by this example and having changed into the lock condition.

[Drawing 7] It is a block diagram showing the important section of the circuitry of the portable computer of an example.

[Drawing 8] It is a flow chart showing control of the power up of the beginning after purchasing a portable computer.

[Drawing 9] It is the flow chart which expressed the work flow for canceling a lock temporarily in the anti-theft mode in which the lock device is operating.

[Drawing 10] It is a flow chart showing the situation of control at the time of having a portable computer away.

[Drawing 11] It is the flow chart having shown a control flow for protection of a portable computer.

[Description of Notations]

10 Portable Computer (Small Electronic Equipment),

11 Body of Computer

23 Dc-battery

24 25 Lock device

27 LCD Lock Control Circuit

28 Body Side Infrared Function Part

33 Infrared Function Part outside Body

41 42 Hook

46 Locking Lever

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[Translation done.]

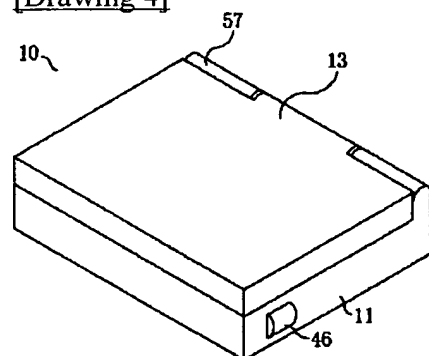
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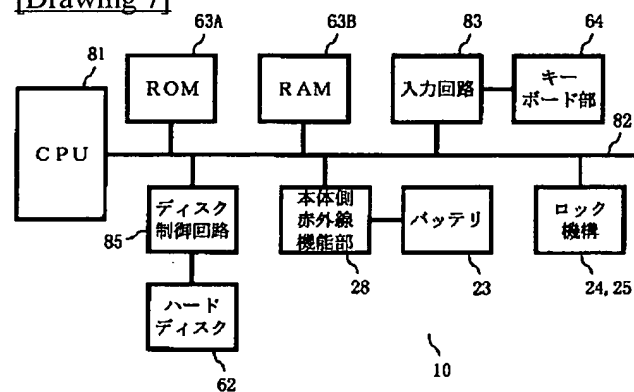
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## DRAWINGS

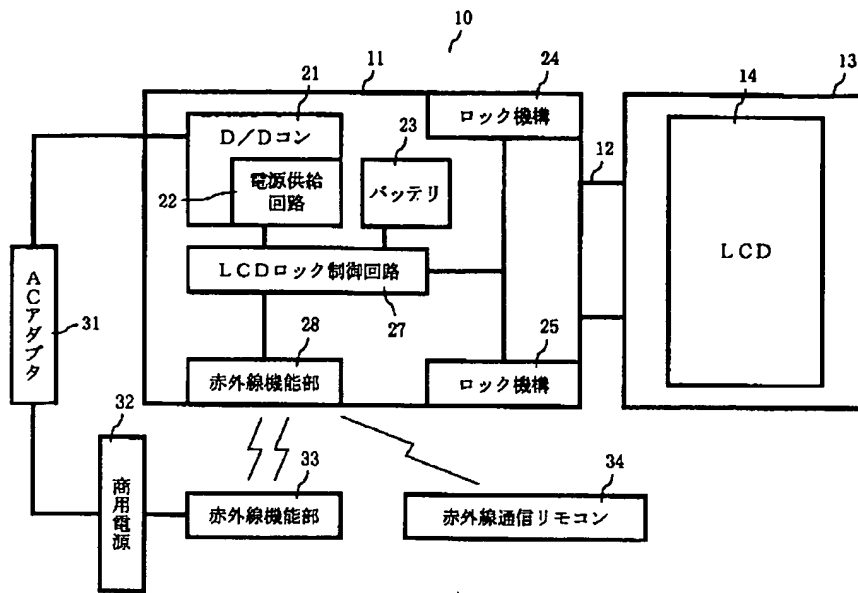
[Drawing 4]



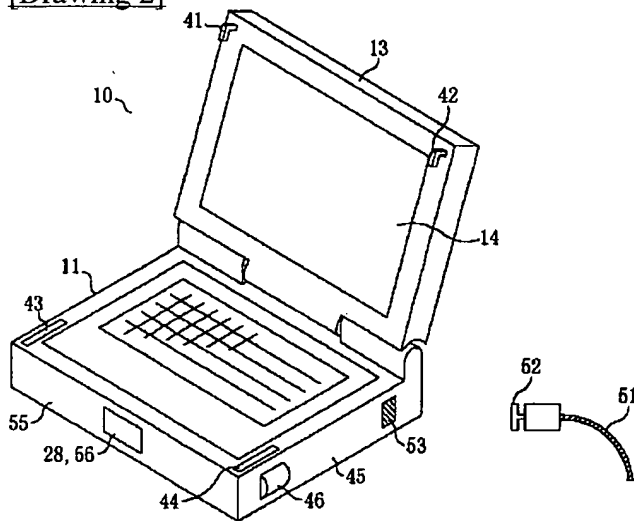
[Drawing 7]



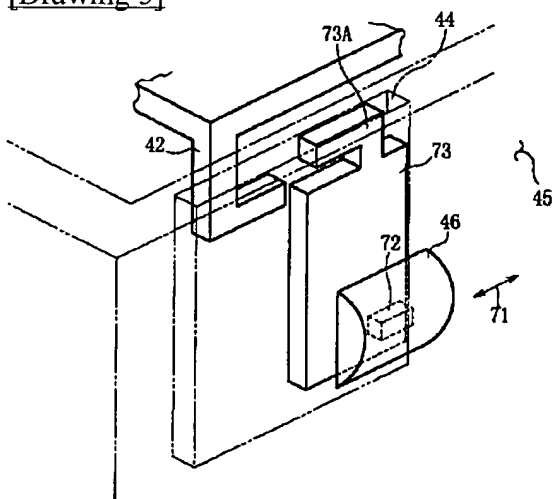
[Drawing 1]



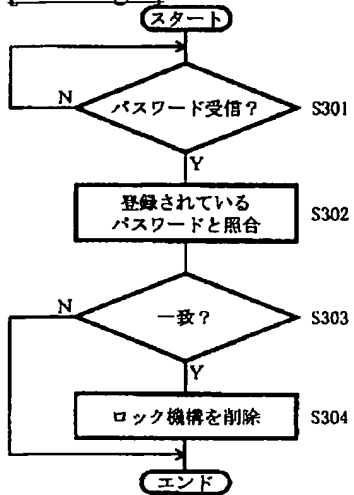
[Drawing 2]



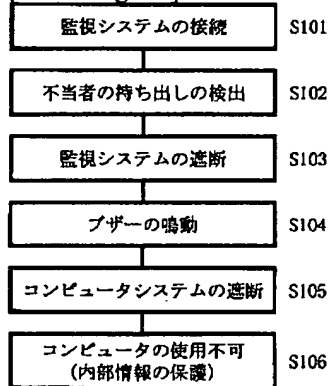
[Drawing 5]



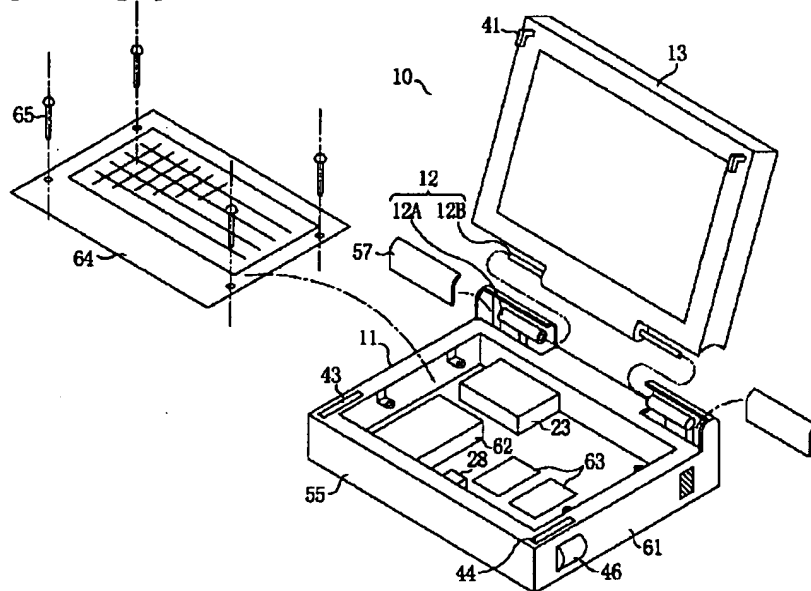
[Drawing 9]



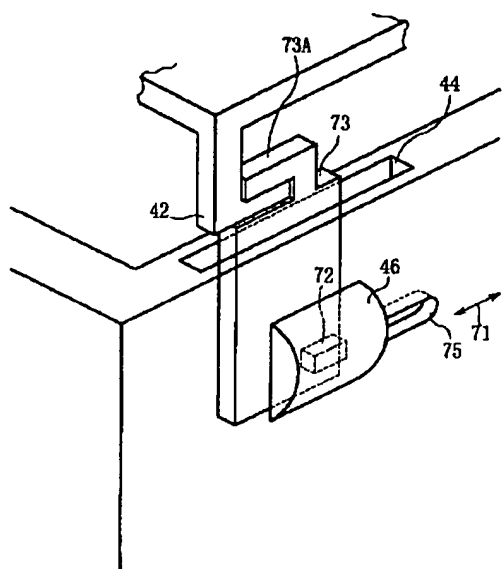
[Drawing 11]



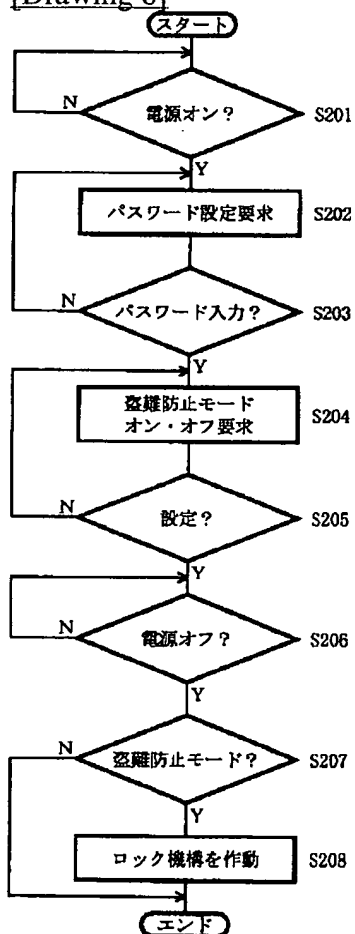
[Drawing 3]



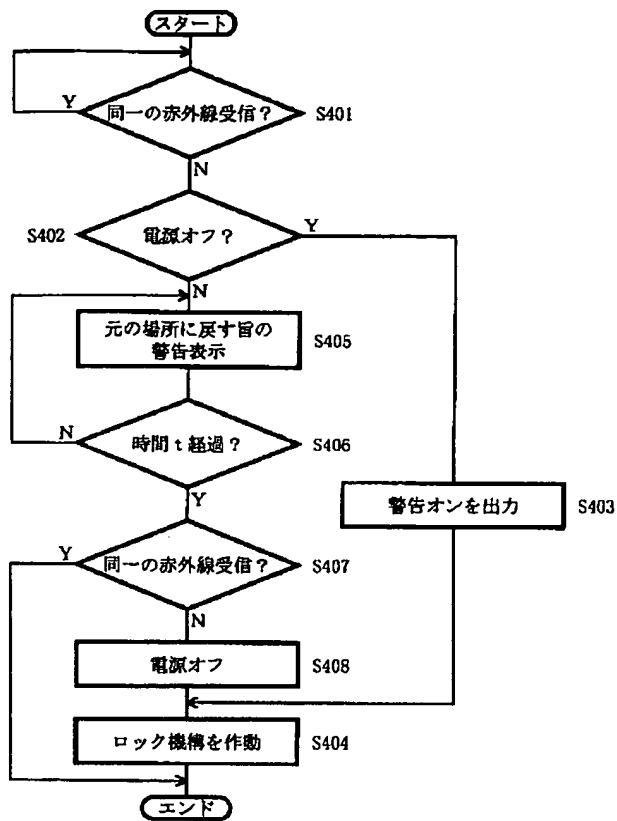
[Drawing 6]



[Drawing 8]



[Drawing 10]



[Translation done.]